

*As
Cand*
circuit means for deactivating the phone unit at a predetermined time and date.

Al
²⁷27. (amended) The mobile unit of claim 1 in combination with [a] the host processor wherein the host processor has means for remote activation of the mobile phone unit.

REMARKS

The Patent and Trademark Office Action dated June 29, 1998 has been carefully considered. The subject application is a divisional of Application Serial No. 381,704, now Patent No. 5,577,100 issued Nov. 19, 1996. As noted in the submitted Information Disclosure Statement, Patent No. 5,577,100 is involved in a patent infringement action and an extensive amount of prior art is under consideration. Certain of the more pertinent references are discussed in this response. Initially, however, the references of Stahl et al and Renton are considered with regard to the Examiner's rejection of the claims under 35 USC § 103.

The communication system described in Stahl et al includes a network controller 18, a plurality of public base stations 20, 22 and 24 and a plurality of cordless telephones or handsets 12 used by the system subscribers. Each subscriber's account is maintained in a billing block 26 associated with the

network controller. The billing block includes meter means for calculating and recording an account corresponding to an amount of callings of the handset. As calls are reported the billing block automatically decrements or debits the subscriber's account.

The addition of the multiple base stations greatly expands the area of use by subscribers. The base stations include subscriber information and may interact with the subscribers' handsets without continuous coupling to the network controller. The base stations instead have daily administrative sessions with the network controller for downloading call detail records and uploading validation and other data from the network controller.

The problem addressed in Stahl et al is to avoid or minimize sessions between a base station and the network controller (where the subscriber accounts are maintained), and, to control excessive charges, for example, when the handset is making an expensive call such as an international direct dialing call. For such calls a credit value or charge limit number (CLN) is established in the handset. When a call is allowed to be connected, because the handset has an adequate CLN value, the base station will send a decrementing algorithm to the handset to program an appropriate rate for decrementing the CLN for the allowed call. (Col. 5, line 65 - Col. 6, line 3)

Thereafter, whenever the handset 12 attempts to place an

IDD call and sends the IDD call data to the base station with a CLN large enough to allow the call, the base station will send a new decrementing algorithm to the handset. Only then will the base station permit the call. (Col. 6, lines 28-40). While a session with the network controller is avoided, the handset must pass call data to the base station and receive a decrementing algorithm or a decrement rate from the base station, before each of the call types that are debited against the CLN can proceed. Other calls are handled in the ordinary manner.

In applicants' phone unit, both the complex billing algorithm and rate data necessary for calculating debit charges for a variety of different call types in a succession of calls are retained within the phone unit. All calls are analyzed and classified. Using a multiple factor accounting protocol and internal rate data, call charges are determined and decremented from an internal debit account.

This important distinction allows the phone unit itself to handle all of the debit accounting until the internal account is exhausted. The phone unit is then locked to all but selected operations. Contact with the host processor, is then required through one of the communication pathways described in applicants' specification to replenish the account.

In a modern wireless phone system, where a phone may roam

from an area or zone operated by one service provider to a zone operated by another, this distinction isn't just important, it is critical. Since the system provider for the debit phones may be wholly independent of any service provider, the phones should seamlessly operate in a plurality of separately owned service areas without special programming by the service providers.

Applicants' debit phone system utilizes a mobile phone unit that appears as a typical phone unit in the shared public communication network. When calls are placed from the unit, the unit is identified and associated with a system provider for normal monthly accounting billed to the identified system provider. The system provider is protected, however, because the internal debit account of the phone unit is pre-paid. The accounting program of the phone unit determines internally whether a call can be made from the phone unit or not. The "base station" or wireless service provider that actually processes the call transmission is not involved in this initial determination. Debiting in the phone unit is "switch independent." Therefore, the service provider involved in a call does not need to be specially programmed to recognize the phone unit as a debit phone and be involved in determining account status to authorize the call to proceed. With applicants' internal debit accounting, when the internal account is exhausted, the phone unit is locked and simply cannot initiate a disallowed call.

So long as the debit account has an account amount sufficient to place calls as determined by the internal accounting program, it can continue to place calls without making contact with the system provider of the debit phone, and, without involving the wireless service provider in a special accounting routine when placing a call.

Renton, U.S. Patent No. 5,233,642 discloses a mobile telephone usage monitoring system combining a mobile unit which generates and collects call detail record information relating to the usage of a cellular transceiver, and a stationary unit which evaluates the call detail records. A communication interface allows transfer of the call detail records from the mobile unit to the stationary unit.

Although the evaluation program is described as "complex," the program specifically resides in the stationary computer, "so changes to the billing evaluation program 254 can be made without any modification to the microprocessor program 170 in the call record generation and collection module 226." (col. 15, lines 24-30). The desired separation would be defeated by the inclusion of the evaluation program in the record generation and collection module. In applicants' mobile phone unit, the complex billing algorithm and rate data for internally calculating the call charges resides in the memory of the phone unit. To clarify this point, the subject matter of claim 15 is incorporated into amended

claim 1.

The Examiner's assertion with reference to claim 15 that the mobile phone unit is a hand-held device with the complex billing algorithm and rate data retained in the memory of the hand-held device, (citing, col. 12, lines 3-10), is incorrect. The call detail record information in the mobile unit is passed by one of several methods described to the stationary unit for collection and evaluation by the computer 224 (col. 12, line 12-18) of the stationary unit.

The disclosure of Renton therefore teaches away from a modification of Stahl et al to include the evaluation program of Renton in the memory of Stahl et al.

The Examiner's objection to claim 1 as originally filed is in part based on his conclusion that "Stahl et al discloses program means in the mobile phone unit including a complex billing algorithm and rate data for internally calculating call charges as calls are made...", the Examiner citing, col. 6, line 1-17 in support thereof. However, it is to be noted that the sequence as depicted in Figs. 4 and 5 of Stahl et al indicates that the decrementing algorithm is sent to the handset in step 522 after the call has been initiated in step 502 and determined to be an international call (col. 5, line 66-68). Therefore, the algorithm and rate are already tailored to the call by the program in the

base station before use by the processor in the handset. This is not the type of "complex" billing algorithm considered by applicant. Analysis and categorization of the call is performed internally in the mobile unit of applicants.

Furthermore, the debit feature of Stahl et al is limited to the international call with other calls handled normally in step 506. The "complex" billing algorithm proposed by applicants is devised to handle the various categories of calls ordinarily made from a phone unit. The algorithm is complex because it considers multiple factors in determining the charge, if any, for a particular call. Where appropriate, the algorithm allows compounding of categories, such as a long distance, roaming call. Also, the algorithm of applicants must calculate charges as calls are made and decrement the charges from a debit account.

In Renton the evaluation of the call detail record is described as complex (col. 15, line 3-30). The variety of different charges for different types of calls may be similar in scope to that proposed by applicant, but, the call evaluation and billing is separate from the call record generation and collection and it is apparent, the evaluation is performed after the call is made and not, as calls are made.

In modifying applicants' base claim to specify that the complex billing algorithm and rate data are retained in memory, not only is it clear that the internal billing is independent of the network billing, but that the complex billing algorithm and rate data are continuously available for calculating a call charge while

a call is made, and, decrementing the charge from the amount in the debit account.

In attempting to combine features of Renton with features of Stahl et al, it is not so obvious what features are added and what features are deleted.

For example, if it is proposed that a complex evaluation program as disclosed in Renton be added to Stahl et al, is step 410, "request stored IDD data from handset" eliminated in Stahl? Is step 506, "handle normally" also eliminated for non IDD calls? Are all calls decremented from the charge limit number? In Renton are the separate processors and programs for processing call detail record information and processing the evaluation of the record information combined? Is only the evaluation program added?

It is apparent that substantial modification to the features of Stahl et al and Renton must be effected before the claimed mobile phone unit of applicants is created. Simply adding the evaluation program of Renton to Stahl et al does not produce the mobile phone unit claimed by applicants. The combination proposed by the Examiner is not obvious and requires substantial selective modification. Claim 1, as amended is believed distinguishable over the combination of Stahl et al and Renton.

Considering certain of the more pertinent prior art references cited in the disclosure statement, Wittstein et al, Patent No. 5,631,947 (Megatrend, WO 92/16078) discloses a mobile telephone device for a rental system combining a handset and an associated computer. Call charges are calculated in the computer of the mobile unit and accumulated for subsequent billing. All calls, except designated free calls, are charged at the same billing rate whether incoming, outgoing, local or long distance. This is not a "complex" billing algorithm as contemplated by applicants. The "complex" nature of applicants' algorithm enables the multiple categories of calls to be considered as well as excepted telephone numbers for which no charge may apply. The basic categories of the multiple factor accounting protocol for classifying a call have been added to the base claim.

Additionally, Wittstein et al includes a charge limit enforcement routine for disabling the phone when total use and call charges, plus a minimum call charge, are greater than a preset charge limit. This limit routine is not considered by applicants to be a "debit account" in which call charges are decremented from an account amount in the debit account. The charge limit in Wittstein prevents a pre-determined credit limit from being exceeded. The telephone device is ultimately returned to the rental station where the exact bill is prepared and paid.

Hattorie et al, Patent No. 5,109,401, discloses a mobile

telephone unit having an internal accounting program for establishing an allowable call charge limit in the phone unit. The allowable charge limit can be on a per call basis or a limit set for accumulated call charges. When the call charge limit is exceeded, an alarm is generated and the call can be automatically terminated. The call charges are calculated in the central processor of the mobile unit and may be displayed on a display unit (Col. 6, lines 14-17). The charge rate is obtained from the base station (Col. 6, lines 6-14). The reference does not disclose the complex billing algorithm of applicants and does not disclose a debit account. Additionally, while the rate data is temporarily stored in RAM the rate information for a call is obtained from the base station.

Ortiz, Patent No. 5,361,297, discloses an autonomous pay telephone. The pay telephone, useful in a taxi, for example, can generate call charges for immediate billing and collection. The arrangement is described as a software controlled, full feature mobile phone add on which includes a metering device for worldwide use which shows the amount of money due to the owner or operator or the pay telephone. The arrangement, which includes a CPU control board and a handset, is designed to meter calls which may be local, long-distance, international incoming or outgoing (col. 15 lines 9-17). Rates and billing information are maintained in a memory 31 Fig. 6.

The reference does not disclose the internal accounting means for generating a debit account or the means for adding an account amount to the debit account so that the phone unit operates as a debit phone. The system of Ortiz is designed for the use of a telephone in a taxi or other for-hire vehicles, such as rental cars, buses and trains where patrons can be billed instantaneously. The system includes accumulation of call records for verification of calls by the system provider and a certain security means limiting access to the call records.

Anritsu, K.K., Japan App. No. 3-45031, Pub. 26 February 1991. The reference discloses a portable telephone handset having information storage means for storing call charge units, the value of which corresponds to the amount of payment made for purchase or rental of the phone. The units are reduced each time a billing signal is received from a base station during a call. The billing signal is received per a timing interval corresponding to a line distance based on an area identification. The handset is deactivated when the units are depleted. The reference mentions that a billing rate table in which rates are based on regions and a clock can be prepared in a portable handset and that the handset can perform the same billing registration and calculation processes as when billing signals were received from a base station. No implementation of this alternative is described. The reference does not discuss features such as roaming, international calls or other factors considered in the complex billing algorithm of

applicant. It is mentioned that the handset can be taken to a "designated agency" for updating the call charge unit information and recharging the battery. However no interaction with a host processor is disclosed.

Anritsu, K.K., Japan App. No. 3-80756, Pub. 5 April 1991. The reference discloses a portable telephone unit having a call charge unit storage means which stores the call charge unit value that corresponds to prepaid call charges obtained when the portable unit is connected to a public pay telephone and a card is inserted or coins deposited to refill the portable telephone handset with a desired call charge unit value. During calls, the call charge unit value is gradually reduced. No details of the manner in which the call charges are calculated are disclosed. An alternate embodiment is disclosed that allows the battery to be charged at a level equivalent to the level of call charge unit value. In both alternatives, when call charge units are used, the handset can be refilled without going to a particular agency, but to the closest public telephone. No host processor is involved in coordinating accounts. The reference primarily relates to a public telephone that can be connected to a portable telephone handset to refill the handset with charge units. Although pertinent to claims 25 and 26 of the subject application relating to a transaction station, the reference does not disclose how call charges are calculated. The reference simply states, "During calls, the call charge unit value is gradually reduced" (Trans. p. 3, lines 6 - 7). The reference

does not disclose a "complex" billing algorithm as claimed by applicant. No information is provided in the Anritsu reference regarding an accounting protocol to handle different categories of calls such as local calls, long distance calls, international calls and roaming calls.

Anritsu, K.K., Japan App. No. 3-60229, Pub. 15 March 1991. The reference discloses a portable telephone handset that is used in a rental business and includes an internal means to detect and store call charge units used for calls, and means to display or to output the used call charge units after a rental period. The handset includes a clock circuit to provide date/time data for discounts, and a time data storage means for call duration per call charge unit for area code zones from different calling areas. An alternate example is disclosed in which a rental fee for a certain number of call charge units can be collected in advance and a call charge unit deducted each time a call charge unit signal is generated. Details relating to the manner of implementing the system are not provided. The only reference to the manner of calculating call charges in the translation is "Time data storage means 23 stores data regarding an allowed call duration per call charge unit (a certain charge) for each area code zone for a call from all certain wireless areas" (Trans. p. 4, lines. 20-21). By implication, this would appear to be a table of time durations for calls from specified call areas to specified area code zones. This manner of calculating call charges differs from the complex billing

algorithm of the subject application which defines a multiple factor accounting protocol for classifying calls according to the basic categories of local calls, long distance calls, international calls and roaming calls. Additionally, the description of the alternate embodiment the Anritsu reference that briefly discloses a rental unit with prepaid call charge units does not disclose any manner of adding units once the units are depleted (Trans. p. 7, lines 9-17). The system thereby differs from the claimed mobile phone unit of the subject application.

NTT, K.K. Japan App. No. 3-280652, Pub. 29 March 1990, discloses a mobile rental terminal (phone) that the user pays call charges in advance and when accumulated call charges exceed the amount prepaid by the user, the communication terminal is disabled. The reference discloses certain procedures for entry of a monetary amount that includes the use of passwords and indicates the calls are billed based on a charge index and call duration. Although an external computer is mentioned for entry of a monetary amount (Eng. Trans. p.4, 1.6), the use of a host processor for controlling the phone accounts is not disclosed. The reference to a charge index is summarily described in the disclosure. "A look up table is used in order to obtain a charge index from this radio wave base station number and the dialed party's area code. The look up table is stored in charge index calculation memory 107 and thus, the charge index is easily obtained" (Trans. p. 5 lines 6-8). Again, this method of calculating a call charge is similar to that of Anritsu,

No. 3-60229 above and differs from the complex billing algorithm of applicants. In a telephone network that is limited in scope, a look up table may adequately serve a region where only a zone code and an area code are considered. However, where it is an objective to provide a mobile debit phone with full calling capabilities, including local, long distance and international calling, a look up table of the type described would be so large as to be unmanageable. The complex billing algorithm of applicants, however, utilizes a multiple factor protocol to categorize calls into basic categories before applying rate data.

In addition, the prepaid debit system of applicants has, as part of the system, the feature of adding to the account after the phone unit has been delivered to the user. The system described in the NTT disclosure does not include this feature.

The representative OMEX COMMUNICATIONS references, including a 1993 hand dated advertisement and 1993 and 1994 pricing list and dealer documentation describe a hand-held cellular debit phone where a customer pays in advance for airtime in blocks of minutes. In each cellular phone there are two debit timer modules, one for calls in the home service area and the other for roaming. Only limited types of calls can be made using the blocks of pre-paid roaming airtime. The two timers allow the dealer to pre-program the cellular phone with blocks of pre-paid air time. Time period blocks are punched into the phone through the keypad. The

phone ceases to operate when the pre-allotted units of time are consumed by the user. Long distance calls must be paid for using a credit card, debit calling card, etc. or other third party billing system.

The described Model B, Omex 900, Cellular Pocket Debit Phone has two modes of operation, home service area and roaming. Each module has a separate timer, and the user apparently switches from one module to the other. Applicants' system is distinguishable in that the internal complex billing algorithm classifies the calls for the basic categories defined in the specification.

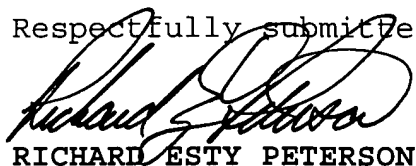
Machado, L., "Making Cellular Renting Your Business," All in Communications, pp. 24-27, 30, dated October 1993 is an article that describes a prepaid cellular system called "SMART TRACKER." The system is described as including cellular telephones with an internal microcircuit that is programmed using a specific code assigned to each circuit for the amount of airtime for which the subscriber chooses to pay. Airtime is stated to be programmed in 60 second increments from one minute to 256 hours with a flashing warning light that signals when the phone is down to 30 minutes. When the subscriber runs out of airtime, the system locks the cellular phone and prevents incoming and outgoing calls. The subscriber must then return to the dealer for reactivation and prepay for additional airtime.

The "Smart Tracker" is distinguishable from the claimed mobile phone unit of applicants in that the "Smart Tracker" system does not utilize a complex billing algorithm and appears to have a single rate for all calls made from the phone.

Of the remaining references considered pertinent, McGregor et al, Patent No. 5,325,418 is pertinent as noted by the Examiner for the use of a clock chip in the phone unit, and a program in the central processing unit for detailed accounting of calls. Gerszberg, Patent No. 5,297,191 is pertinent for remote activation and programming of a mobile phone unit. D'Avello et al, Patent No. 4,831,647 is pertinent to security measures for over the air account transmissions. Hillis, Patent No. 5,303,297 is pertinent for disclosing an internal accounting system in a mobile phone unit, although for a purpose different than a prepaid debit account. Stahl et al, Patent No. 5,138,650 is pertinent, as noted by the Examiner, for disclosing a mobile debit phone, with an internal debit account for limiting certain types of calls.

It is respectfully requested that the Examiner reconsider the rejection of the claims in view of the extensive amendment to claim 1. A check in the amount of \$240.00 is submitted for submission of the Information Disclosure Statement under 37 CFR § 1.17 (p).

Respectfully submitted,



RICHARD ESTY PETERSON

REP:cls

Date: November ³⁰~~23~~, 1998

BIELLEN, PETERSON & LAMPE
1990 N. California Boulevard
Suite 720
Walnut Creek, California 94596

Tel: (925) 937-1515
Fax: (925) 937-1529